

LU 6084 (US)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

Shahram Miham et al.

Serial No.: **10/538,540**

Filed: **June 10, 2005**

For: **COPOLYMERS OF ETHYLENE
WITH ALPHA-OLEFINS**

Examiner: **Unknown**

Art Unit: **1714**

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

December 1, 2005

INFORMATION DISCLOSURE STATEMENT

This Information Disclosure Statement is being filed before the first Office action on the merits.

References cited in the application and in the International Search Report (copy enclosed) are included on Form PTO-1449. Copies of the following are enclosed.


DE 19710615 (German) US 6,255,418 counterpart	WO 93/03093	WO 98/44011
DE 19745047 (German) US 6,350,814 counterpart	WO 93/12151	WO 99/06414 (German) US 6,417,302 counterpart
EP 100 842	WO 95/27005	WO 00/05277 (German) US 6,589,905 counterpart
EP 416 815	WO 96/00243	WO 00/24787
EP 420 436	WO 97/04015	WO 00/31090 (German)
EP 662 989	WO 97/36937	WO 01/12641 (German) US 6,437,161 counterpart
EP 728 160	WO 98/03559	WO 01/12687 (Dutch) US 6,911,516 counterpart
EP 742 046 (German)	WO 98/22486	WO 01/41920
WO 90/03414	WO 98/27124	WO 01/92346
WO 91/09882	WO 98/40419 (German)	WO 01/96417 (Dutch) US 6,924,248 counterpart

S. Pang et al., "Size-Exclusion Chromatographic Assessment of Long-Chain Branch Frequency in Polyethylenes," <u>American Chemical Society</u> , Chapter 17, p. 254-269 (1993), ACS Symposium Series 521, <u>Chromatography of Polymers</u> edited by T. Provder
L. Wild, "Temperature Rising Elution Fractionation," <u>Advances in Polymer Science</u> 98, p. 1-47 (1990)
W. von Freiesleben, "Über eine neue Fulven-Synthese [1]," <u>Angew Chem.</u> , Vol. 75(12), p. 576 (1963)
R. Halterman, "Synthesis and Applications of Chiral Cyclopentadienylmetal Complexes," <u>Chem. Rev.</u> , Vol. 92, p. 965-994 (1992)
S. Strauss, "The Search for Larger and More Weakly Coordinating Anions," <u>Chem. Rev.</u> , Vol. 93(3), p. 927-942 (1993)
M. Enders et al., "8-Quinolylyclopentadienyl, a Ligand with a Tailored Fit for Chelate Complexes," <u>Chem. Ber.</u> , Vol. 129, p. 459-463 (1996)
B. Monrabal, "Crystallization Analysis Fractionation: A New Technique for the Analysis of Branching Distribution in Polyolefins," <u>Journal of Applied Polymer Science</u> , Vol. 52, p. 491-499 (1994)
J. Ewen et al., "Expanding the Scope of Metallocene Catalysis: Beyond Indenyl and Fluorenyl Derivatives," p. 150-169 (1999)
M. Enders et al., "New Chromium (III) Complexes as Highly Active Catalysts for Olefin Polymerization," <u>Organometallics</u> , Vol. 20(24), p. 5005-5007 (2001)
S. Bradley et al., "Synthesis and Structure of Amino-Functionalized Cyclopentadienyl Vanadium Complexes and Evaluation of Their Butadiene Polymerization Behavior," <u>Organometallics</u> , Vol. 21(16), p. 3443-3453 (2002)
N. Furukawa et al., "Preparation of Pyridyl Grignard Reagents and Cross Coupling Reactions with Sulfoxides Bearing Azaheterocycles," <u>Tetrahedron Letters</u> , Vol. 28(47), p. 5845-5848 (1987)
L. Brandsma, <u>Preparative Polar Organometallic Chemistry</u> , Volume 2, Springer-Verlag, p. 133-142
P. Jutzi et al., "Cyclopentadienyl compounds with nitrogen donors in the side-chain," <u>Journal of Organometallic Chemistry</u> , Vol. 500, p. 175-185 (1995)

No payment is believed to be due; however, the Commissioner is hereby authorized to charge USPTO deposit account 08-2336 any payment due and to credit any overpayment thereto.

Respectfully submitted,

SHAHRAM MIHAN et al.

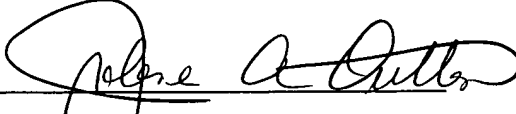
By: 
William R. Reid
Registration No. 47,894
Attorney for Applicants

Enclosures

Basell USA Inc.
912 Appleton Road
Elkton, MD 21921

Agent's Telephone No.: 410-996-1783
Agent's Fax No.: 410-996-1560

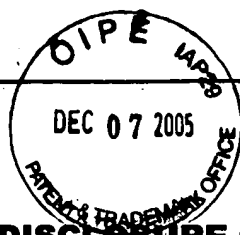
I hereby certify that this correspondence is being deposited with sufficient postage thereon with the United States Postal Service as first class mail on December 1, 2005, in an envelope addressed to:
Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450,
Alexandria, VA 22313-1450



December 1, 2005

Date of Signature

Form PTO-1449



INFORMATION DISCLOSURE CITATION IN AN APPLICATION

(Use several sheets if necessary)

Document Number (optional)

LU 6084 (US)

Application Number

10/538,540

Applicant

Shahran Mihan et al.

Filing Date

June 10, 2005

GROUP ART UNIT

1714

U. S. PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	3 1 2 5 5 4 7	03/17/64	Blatz	260	45.5	02/09/61
	3 2 4 2 1 5 0	03/22/66	Scoggin	260	88.2	03/31/60
	3 2 4 8 1 7 9	04/26/66	Norwood	23	285	02/26/62
	5 6 2 5 0 1 6	04/29/97	Schiffino et al.	526	160	10/20/95
	6 2 5 5 4 1 8	07/03/01	Jolly et al.	526	160	07/18/97
	6 3 5 0 8 1 4	02/26/02	Bauer et al.	525	191	09/18/98
	6 4 1 7 3 0 2	07/09/02	Bohnen	526	160	07/23/98
	6 4 3 7 1 6 1	08/20/02	Mihan et al.	556	11	08/13/99
	6 5 8 9 9 0 5	07/08/03	Fischer et al.	502	300	07/13/99
	6 7 8 7 4 9 8	09/07/04	Mihan et al.	502	120	06/11/02
	6 8 1 2 1 8 5	11/02/04	Fischer et al.	502	120	07/30/03

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO
1	9 7 1 0 6 1 5	09/17/98	DE	C08F	4/69		
1	9 7 4 5 0 4 7	04/15/99	DE	C08L	23/08		
	0 1 0 0 8 4 3	02/22/84	EP	C08L	23/04		
	0 4 1 6 8 1 5	03/13/91	EP	C08F	10/00		
	0 4 2 0 4 3 6	04/03/91	EP	C07F	7/00		

OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

	S. Pang et al., "Size-Exclusion Chromatographic Assessment of Long-Chain Branch Frequency in Polyethylenes," <u>American Chemical Society</u> , Chapter 17, p. 254-269 (1993), ACS Symposium Series 521, <u>Chromatography of Polymers</u> edited by T. Provder
	L. Wild, "Temperature Rising Elution Fractionation," <u>Advances in Polymer Science</u> 98, p. 1-47 (1990)
	W. von Freiesleben, "Über eine neue Fulven-Synthese [1]," <u>Angew Chem.</u> , Vol. 75(12), p. 576 (1963)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

Form PTO-1449 INFORMATION DISCLOSURE CITATION IN AN APPLICATION <i>(Use several sheets if necessary)</i>		Document Number (optional) LU 6084 (US)		Application Number 10/538,540	
		Applicant Shahran Mihan et al.			
		Filing Date June 10, 2005		GROUP ART UNIT 1714	

U. S. PATENT DOCUMENTS									
EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE			
	6 8 3 8 5 6 3	01/04/05	Mihan et al.	546	10	06/11/02			
2003	0 0 3 6 6 5 8	02/20/03	Mihan et al.	548	402	06/11/02			
2003	0 0 3 6 6 6 2	02/20/03	Mihan et al.	556	20	06/11/02			
2003	0 0 5 5 2 6 7	03/20/03	Mihan et al.	548	402	06/11/02			
2003	0 1 7 6 2 7 5	09/18/03	Fraaije et al.	502	103	06/13/01			
2003	0 2 3 6 1 6 4	12/25/03	Fischer et al.	502	439	07/30/03			
2004	0 0 3 3 8 9 0	02/19/04	Mihan et al.	502	113	06/13/01			
	6 9 1 1 5 1 6	06/28/05	Mihan et al.	526	348	08/01/00			
	6 9 1 9 4 1 2	07/19/05	Mihan et al.	526	127	08/01/00			
	6 9 2 4 2 4 8	08/02/05	Mihan et al.	502	132	06/13/01			

FOREIGN PATENT DOCUMENTS							
	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO
	0 6 6 2 9 8 9	07/19/95	EP	C08L	23/04		
	0 7 2 8 1 6 0	08/28/96	EP	C08L	23/04		
	0 7 4 2 0 4 6	11/13/96	EP	B01J	31/18		
	9 0 0 3 4 1 4	04/05/90	WO	C08L	23/08		
	9 3 0 3 0 9 8	02/18/93	WO	C08L	23/04		

OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)	
	R. Halterman, "Synthesis and Applications of Chiral Cyclopentadienylmetal Complexes," <u>Chem. Rev.</u> , Vol. 92, p. 965-994 (1992)
	S. Strauss, "The Search for Larger and More Weakly Coordinating Anions," <u>Chem. Rev.</u> , Vol. 93(3), p. 927-942 (1993)
	M. Enders et al., "8-Quinolylcyclopentadienyl, a Ligand with a Tailored Fit for Chelate Complexes," <u>Chem. Ber.</u> , Vol. 129, p. 459-463 (1996)

EXAMINER	DATE CONSIDERED
-----------------	------------------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

Form PTO-1449						Document Number (optional) LU 6084 (US)		Application Number 10/538,540						
INFORMATION DISCLOSURE CITATION IN AN APPLICATION <i>(Use several sheets if necessary)</i>						Applicant Shahran Mihan et al.								
						Filing Date June 10, 2005		GROUP ART UNIT 1714						
U. S. PATENT DOCUMENTS														
EXAMINER INITIALS		DOCUMENT NUMBER					DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE			
FOREIGN PATENT DOCUMENTS														
		DOCUMENT NUMBER					DATE	COUNTRY	CLASS	SUBCLASS	Translation YES NO			
		9	3	1	2	1	5	1	06/24/93	WO	C08F	210/02		
		9	5	2	7	0	0	5	10/12/95	WO	C08L	23/06		
		9	6	0	0	2	4	3	01/04/96	WO	C08F	4/642		
		9	7	0	4	0	1	5	02/06/97	WO	C08F	10/00		
		9	7	3	6	9	3	7	10/09/97	WO	C08F	4/603		
OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)														
		B. Monrabal, "Crystallization Analysis Fractionation: A New Technique for the Analysis of Branching Distribution in Polyolefins," <u>Journal of Applied Polymer Science</u> , Vol. 52, p. 491-499 (1994)												
		J. Ewen et al., "Expanding the Scope of Metallocene Catalysis: Beyond Indenyl and Fluorenyl Derivatives," p. 150-169 (1999)												
		M. Enders et al., "New Chromium (III) Complexes as Highly Active Catalysts for Olefin Polymerization," <u>Organometallics</u> , Vol. 20(24), p. 5005-5007 (2001)												
EXAMINER								DATE CONSIDERED						
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.														

Form PTO-1449 INFORMATION DISCLOSURE CITATION IN AN APPLICATION <i>(Use several sheets if necessary)</i>	Document Number (optional)	Application Number
	LU 6084 (US)	10/538,540
	Applicant Shahran Mihan et al.	
	Filing Date	GROUP ART UNIT
	June 10, 2005	1714

U. S. PATENT DOCUMENTS

[illegible]

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER								DATE	COUNTRY	CLASS	SUBCLASS	Translation	
													YES	NO
	9	8	0	3	5	5	9	01/29/98	WO	C08F	4/70			
	9	8	2	2	4	8	6	05/28/98	WO	C07F	17/00			
	9	8	2	7	1	2	4	06/25/98	WO	C08F	10/00			
	9	8	4	0	4	1	9	09/17/98	WO	C08F	10/00			
	9	8	4	4	0	1	1	10/08/98	WO	C08F	210/16			

OTHER2 DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

	S. Bradley et al., "Synthesis and Structure of Amino-Functionalized Cyclopentadienyl Vanadium Complexes and Evaluation of Their Butadiene Polymerization Behavior," <u>Organometallics</u> , Vol. 21(16), p. 3443-3453 (2002)
	N. Furukawa et al., "Preparation of Pyridyl Grignard Reagents and Cross Coupling Reactions with Sulfoxides Bearing Azaheterocycles," <u>Tetrahedron Letters</u> , Vol. 28(47), p. 5845-5848 (1987)
	L. Brandsma, <u>Preparative Polar Organometallic Chemistry</u> , Volume 2, Springer-Verlag, p. 133-142

EXAMINER	DATE CONSIDERED
-----------------	------------------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

[illegible]

Form PTO-1449				Document Number (optional) LU 6084 (US)		Application Number 10/538,540																																																																																																																			
INFORMATION DISCLOSURE CITATION IN AN APPLICATION <i>(Use several sheets if necessary)</i>				Applicant <div style="text-align: center; padding: 5px;">Shahran Mihan et al.</div>																																																																																																																					
				Filing Date June 10, 2005		GROUP ART UNIT 1714																																																																																																																			
U. S. PATENT DOCUMENTS																																																																																																																									
EXAMINER INITIALS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">DOCUMENT NUMBER</th> <th style="width: 10%;">DATE</th> <th style="width: 30%;">NAME</th> <th style="width: 10%;">CLASS</th> <th style="width: 10%;">SUBCLASS</th> <th style="width: 30%;">FILING DATE IF APPROPRIATE</th> </tr> <!-- 10 empty rows --> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>							DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE																																																																																																												
DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE																																																																																																																				
FOREIGN PATENT DOCUMENTS																																																																																																																									
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 20%;">DOCUMENT NUMBER</th> <th style="width: 10%;">DATE</th> <th style="width: 20%;">COUNTRY</th> <th style="width: 10%;">CLASS</th> <th style="width: 10%;">SUBCLASS</th> <th colspan="2" style="width: 30%;">Translation</th> </tr> <tr> <th> </th> <th> </th> <th> </th> <th> </th> <th> </th> <th>YES</th> <th>NO</th> </tr> <!-- 5 data rows --> <tr> <td>0 1 1 2 6 8 7</td> <td>02/22/01</td> <td>WO</td> <td>C08F</td> <td>210/16</td> <td> </td> <td> </td> </tr> <tr> <td>0 1 4 1 9 2 0</td> <td>06/14/01</td> <td>WO</td> <td>B01J</td> <td>21/00</td> <td> </td> <td> </td> </tr> <tr> <td>0 1 9 2 3 4 6</td> <td>12/06/01</td> <td>WO</td> <td>C08F</td> <td>10/00</td> <td> </td> <td> </td> </tr> <tr> <td>0 1 9 6 4 1 7</td> <td>12/20/01</td> <td>WO</td> <td>C08F</td> <td>10/00</td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>							DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation							YES	NO	0 1 1 2 6 8 7	02/22/01	WO	C08F	210/16			0 1 4 1 9 2 0	06/14/01	WO	B01J	21/00			0 1 9 2 3 4 6	12/06/01	WO	C08F	10/00			0 1 9 6 4 1 7	12/20/01	WO	C08F	10/00																																																																										
DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation																																																																																																																				
					YES	NO																																																																																																																			
0 1 1 2 6 8 7	02/22/01	WO	C08F	210/16																																																																																																																					
0 1 4 1 9 2 0	06/14/01	WO	B01J	21/00																																																																																																																					
0 1 9 2 3 4 6	12/06/01	WO	C08F	10/00																																																																																																																					
0 1 9 6 4 1 7	12/20/01	WO	C08F	10/00																																																																																																																					
OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)																																																																																																																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; height: 30px;"> </td> <td> </td> </tr> <tr> <td style="height: 30px;"> </td> <td> </td> </tr> <tr> <td style="height: 30px;"> </td> <td> </td> </tr> <tr> <td style="height: 30px;"> </td> <td> </td> </tr> </table>																																																																																																																									
EXAMINER				DATE CONSIDERED																																																																																																																					
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.																																																																																																																									